What's this learning business all about?

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If you've ever tried to dip your toe into understanding what all this fancy AI stuff is about, you've seen at least two of the following: statistical learning (SL), machine learning (ML), and deep learning (DL).

This is a completely non-factual, yet highly accurate explanation, of what each type of learning is:

Statistical Learning AI you do with pen and paper.

Machine Learning AI you do on a CPU.

Deep Learning AI you do on a GPU.

Q: So the only one I need is DL, right?

A: Well, not quite. If you have more data than money, or want to have more than a throwaway understanding of the data you have then going up the bullet point list is worthwhile.

As an example from some work I recently did on the stock market:

Pretty much all correlations that make money show up for a few seconds/weeks, then disappear. Use DL for these. It's not worth trying to understand them since there are billions of them and they change all the time.

There are correlations that persist in a dataset from start to finish. Those are worthwhile having a look at using ML. You can save money on training DL models by adding them as inductive biases.

If the ML tools find the same correlation in all your datasets, then something interesting is happening. Using SL at this point lets you build a model simple enough for your tiny monkey brain to understand. Don't expect to make money off it. Knowing what SL models apply to a field makes you an expert in that field who doesn't just follow their gut.

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